

Potential of four corn varieties at different harvest stages for silage production in Malaysia

ABSTRACT

Objective: Apart from various climatic differences, corn harvest stage and varieties are two major factors that can influence the yield and quality of corn silage in the tropics. A study was conducted to determine the optimum harvest stage of four corn varieties for silage production in Malaysia. **Methods:** Corn was harvested at four growth stages; silking, milk, dough, and dent stages from four varieties; Sweet Corn hybrid 926, Suwan, breeding test line (BTL) 1 and BTL 2. Using a split plot design, the treatments were then analysed based on the plant growth performance, yield, nutritive and feeding values followed by a financial feasibility study for potential commercialization. **Results:** Significant differences and interactions were detected across the parameters suggesting varying responses among the varieties towards the harvest stages. Sweet Corn was best harvested early in the dough stage due to high dry matter (DM) yield, digestible nutrient, and energy content with low fibre portion. Suwan was recommended to be harvested at the dent stage when it gave the highest DM yield with optimum digestible nutrient and energy content with low acid detergent fibre. BTL 1 and BTL 2 varieties can either be harvested at dough or dent stages as the crude protein, crude fibre, DM yield, DM content, digestible nutrient and energy were not significantly different at either stage. Further financial analysis showed that only Sweet Corn production was not financially feasible while Suwan had the best financial appraisal values among the grain varieties. **Conclusion:** In conclusion, only the grain varieties tested had the potential for silage making according to their optimum harvest stage but Suwan is highly recommended for commercialization as it was the most profitable.

Keyword: Corn silage; Corn variety; Harvest stage; Malaysia; Tropical